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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,932	04/06/2001	Ronald John Veitch	P20739	3609

7055 7590 12/12/2003

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EXAMINER	
AHMED, SHEEBA	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/826,932	VEITCH ET AL.
	Examiner	Art Unit
	Sheeba Ahmed	1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *24 and 25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-23 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Claims 1 and 24-26 have been amended in the above-identified application. **Claims 1-26 are pending of which claims 1-23 and 26 are now under consideration.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 8,10, 12, 14, 16, 21, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsubaguchi et al. (US 6,030,689).

Matsubaguchi et al. disclose a magnetic recording medium comprising a non-magnetic support having thereon at least two coating layers which comprise a lower coating layer formed on the substrate and comprising soft magnetic particles and a binder and a magnetic layer formed on the lower coating layer and comprising ferromagnetic particles dispersed in a binder formed (Column 4, lines 7-19). The thickness of the magnetic layer is from 0.05 to 1 microns ***(thus meeting the limitation that the upper binder-containing magnetic recording layer has a thickness of less than 0.5 microns)*** (Column 10, lines 26-28). The soft magnetic particles of the lower layer have a coercive force of 0 to 300 Oe ***(equivalent to 0 to 23.87 KA/m and thus***

meeting the limitation that the coercive force of the lower layer is less than 4 KA/m) and examples include particulate magnetite ***(which is Fe_3O_4 and thus meets the limitation that the magnetically soft pigment is selected from Fe_2O_3, Fe_3O_4 and a solid solution of theses components and meets the limitations of claim 12)*** (Column 10, lines 43-44 and 64-67). At least part of the surface of the soft magnetic particles is covered with aluminum oxide and/or silicone oxide and the surface-covering layer is a homogenous and dense surface layer ***(thus meeting the limitations of claim 10)*** (Column 11, lines 8-22). A carbon black may be incorporated in the lower layer and may have an average particle diameter of 5 to 80 nm ***(suggesting that the particles are spherical or amorphous and thus meeting the limitations of claim 14, 16, and 21)*** (Column 11, lines 36-48). The ferromagnetic particles used in the magnetic layer include a cobalt-modified ferromagnetic iron oxide and particles of elemental metals and metal alloys ***(thus meeting the limitations of claims 3 and 4)*** (Column 12, lines 7-37). Example 1-1 show that the ferromagnetic particles employed in the magnetic layer have an Hc of 2450 Oe ***(equivalent to 194.95 KA/m and thus meeting the limitations of claim 2)***. The examples show that the above-described magnetic recording materials were used to make videotapes ***(thus meeting the limitations of claim 26)*** and that the amount of the soft magnetic pigment particles in the lower layer is more than 75% by weight based on the weight of all pigments *(for example in Example 2-1, the amount of the soft magnetic particles, carbon black and aluminum oxide particles is 80 parts, 20 parts and 1 part by weight, respectively, and hence the amount of the soft magnetic particles is more than 75% by weight based on the weight of all pigments in*

the lower layer). With regards to the limitation that the anhysteretic susceptibility of the lower layer at 2kA/m is greater than 7, the Examiner takes the position that such a limitation is inherently met by the lower layer taught by Matsubaguchi et al. given that the anhysteretic susceptibility of the lower layer is related to the microstructure of the magnetic materials of the lower layer and further given that the magnetically soft pigment used in the lower layer taught by Matsubaguchi et al. and that used in the lower layer of the claimed invention are identical. All limitations of claims 1-4, 6, 8,10, 12, 14, 16, 21, and 26 are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 5, 7, 9, 11, 13, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubaguchi et al. (US 6,030,689) in view of Hisano et al. (US 6,440,545 B1).

Matsubaguchi et al. disclose a magnetic recording medium comprising a non-magnetic support having thereon at least two coating layers which comprise a lower coating layer formed on the substrate and comprising soft magnetic particles and a binder and a magnetic layer formed on the lower coating layer and comprising ferromagnetic particles dispersed in a binder formed (Column 4, lines 7-19). The

thickness of the magnetic layer is from 0.05 to 1 microns (Column 10, lines 26-28). The soft magnetic particles of the lower layer have a coercive force of 0 to 300 Oe and examples include particulate magnetite (Column 10, lines 43-44 and 64-67). At least part of the surface of the soft magnetic particles is covered with aluminum oxide and/or silicone oxide and the surface-covering layer is a homogenous and dense surface layer (Column 11, lines 8-22). A carbon black may be incorporated in the lower layer and may have an average particle diameter of 5 to 80 nm (Column 11, lines 36-48). The ferromagnetic particles used in the magnetic layer include a cobalt-modified ferromagnetic iron oxide and particles of elemental metals and metal alloys (Column 12, lines 7-37). Example 1-1 show that the ferromagnetic particles employed in the magnetic layer have an Hc of 2450 Oe. The examples show that the above-described magnetic recording materials were used to make videotapes and that the amount of the soft magnetic pigment particles in the lower layer is more than 75% by weight based on the weight of all pigments *(for example in Example 2-1, the amount of the soft magnetic particles, carbon black and aluminum oxide particles is 80 parts, 20 parts and 1 part by weight, respectively, and hence the amount of the soft magnetic particles is more than 75% by weight).* With regards to the limitation that the anhysteretic susceptibility of the lower layer at 2kA/m is greater than 7, the Examiner takes the position that such a limitation is inherently met by the lower layer taught by Matsubaguchi et al. given that the anhysteretic susceptibility of the lower layer is related to the microstructure of the magnetic materials of the lower layer and further given that the magnetically soft

pigment used in the lower layer taught by Matsubaguchi et al. and that used in the lower layer of the claimed invention are identical.

Matsubaguchi et al. do not teach that the crystallite size of the soft magnetic particles, i.e., the particulate magnetite, in the lower layer is from 7 to 17nm.

However, Hisano et al. disclose a powder for use in the lower layer of a coating type magnetic recording medium having a multilayer structure (Column 1, lines 6-8) wherein the powder has a crystallite size in the range of 10 to 200 angstroms ***(equivalent to 1 to 20 nm)*** and Hisano et al. specifically teach that the use of such a crystallite size greatly effects the surface smoothness of the resulting magnetic recording tape (Column 5, lies 4-24).

Accordingly, it would have been obvious to one having ordinary skill in the art to use a soft magnetic powder, such magnetite, having a crystallite size of 1 to 20 nm given that Hisano et al. specifically teach that a small crystallite size greatly affects the surface smoothness of the resulting magnetic recording tape.

4. Claim 18- 20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubaguchi et al. (US 6,030,689) in view of Hisano et al. (US 6,440,545 B1) and Ejiri et al. (US 6,143,403).

Matsubaguchi et al. disclose a magnetic recording medium comprising a non-magnetic support having thereon at least two coating layers which comprise a lower coating layer formed on the substrate and comprising soft magnetic particles and a binder and a magnetic layer formed on the lower coating layer and comprising

ferromagnetic particles dispersed in a binder formed (Column 4, lines 7-19). The thickness of the magnetic layer is from 0.05 to 1 microns (Column 10, lines 26-28). The soft magnetic particles of the lower layer have a coercive force of 0 to 300 Oe and examples include particulate magnetite (Column 10, lines 43-44 and 64-67). At least part of the surface of the soft magnetic particles is covered with aluminum oxide and/or silicone oxide and the surface-covering layer is a homogenous and dense surface layer (Column 11, lines 8-22). A carbon black may be incorporated in the lower layer and may have an average particle diameter of 5 to 80 nm (Column 11, lines 36-48). The ferromagnetic particles used in the magnetic layer include a cobalt-modified ferromagnetic iron oxide and particles of elemental metals and metal alloys (Column 12, lines 7-37). Example 1-1 show that the ferromagnetic particles employed in the magnetic layer have an Hc of 2450 Oe. The examples show that the above-described magnetic recording materials were used to make videotapes and that the amount of the soft magnetic pigment particles in the lower layer is more than 75% by weight based on the weight of all pigments *(for example in Example 2-1, the amount of the soft magnetic particles, carbon black and aluminum oxide particles is 80 parts, 20 parts and 1 part by weight, respectively, and hence the amount of the soft magnetic particles is more than 75% by weight).* With regards to the limitation that the anhysteretic susceptibility of the lower layer at 2kA/m is greater than 7, the Examiner takes the position that such a limitation is inherently met by the lower layer taught by Matsubaguchi et al. given that the anhysteretic susceptibility of the lower layer is related to the microstructure of the magnetic materials of the lower layer and further given that the magnetically soft

pigment used in the lower layer taught by Matsubaguchi et al. and that used in the lower layer of the claimed invention are identical. However, Hisano et al., on the other hand, disclose a powder for use in the lower layer of a coating type magnetic recording medium having a multilayer structure (Column 1, lines 6-8) wherein the powder has a crystallite size in the range of 10 to 200 angstroms and Hisano et al. specifically teach that the use of such a crystallite size greatly effects the surface smoothness of the resulting magnetic recording tape (Column 5, lies 4-24).

Matsubaguchi et al. and Hisano et al. do not teach that the nonmagnetic pigment in the lower layer is α-Fe_2O_3 or a mixture of carbon black and α-Fe_2O_3.

However, Ejiri et al. disclose a magnetic recording medium comprising a non-magnetic support and provided thereon at least a lower layer (a) comprising a binder and a non-magnetic pigment and an upper magnetic layer (b) comprising a binder and a ferromagnetic powder (See Abstract). Layer (b) maybe coated on layer (a) in a wet state while preventing the formation of a mixed region in the interface between layers (a) and (b) by using a non-magnetic metal oxide powder in combination with carbon black. Examples of suitable non-magnetic metal oxide powders include □-iron oxide (Column 17, lines 37-57, Column 20, lines 66-67 and Column 21, lines 15-25).

Accordingly, it would have been obvious to one having ordinary skill in the art to use a use a non-magnetic metal oxide powder, such as □-iron oxide, in combination with the carbon black taught by Matsubaguchi et al. given that Ejiri et al. specifically teach that doing so allows the magnetic recording medium to be made by a method

wherein layer (b) maybe coated on layer (a) in a wet state while preventing the formation of a mixed region in the interface between layers.

Response to Arguments

5. Applicant's arguments with respect to claims 1-23 and 26 have been considered but are moot in view of the new ground(s) of rejection. However, the Examiner would like to address the Applicants assertion that there is no motivation to modify the disclosure of Matsubaguchi et al. based on the teachings of Hisano given that Matsubaguchi et al. teach a certain particle size and one having ordinary skill in the art would not have been motivated to vary these sizes in the absence of some direction in Matsubaguchi et al.

In response the Examiner would like to point out that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Furthermore, the test for obviousness is not whether the claimed invention is expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, it would have been obvious to one having ordinary skill in the art to use a soft magnetic powder, such magnetite,

having a crystallite size of 1 to 20 nm given that Hisano et al. specifically teach that a small crystallite size greatly affects the surface smoothness of the resulting magnetic recording tape.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.

Sheeba Ahmed
Art Unit 1773
December 8, 2003